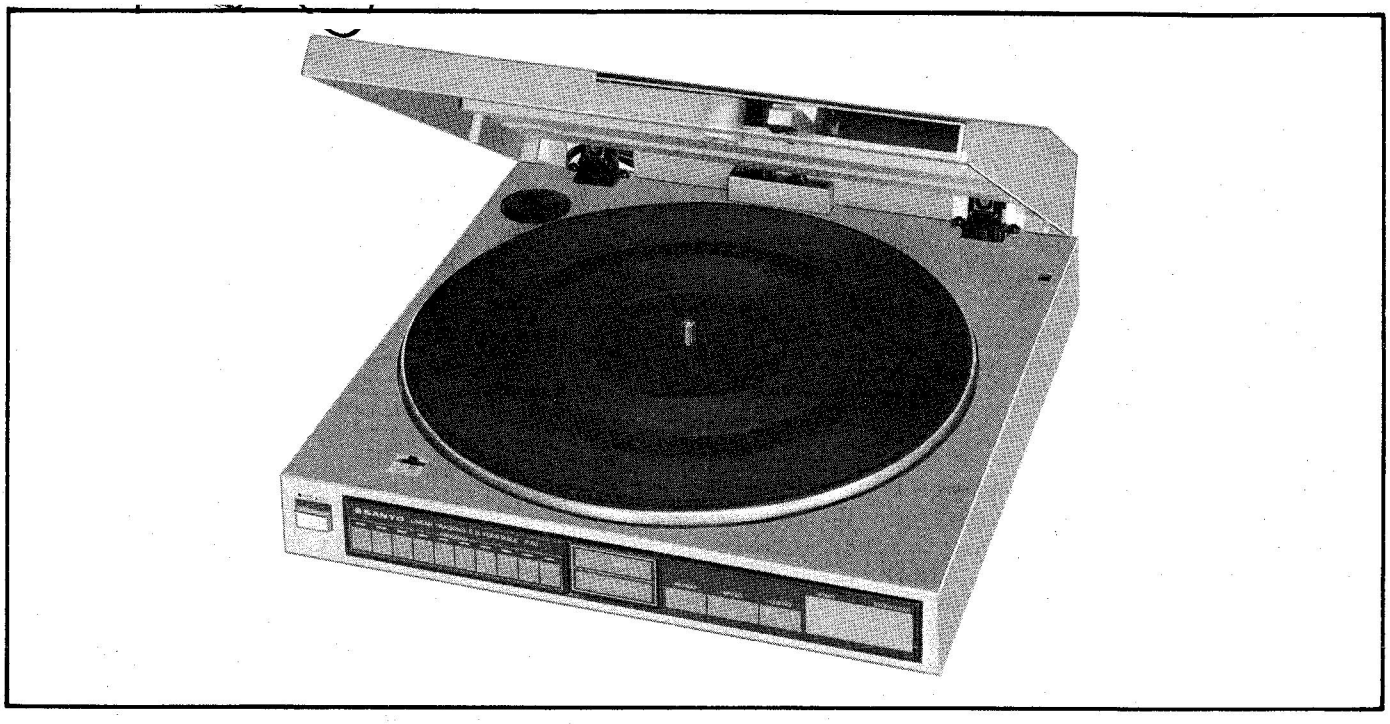
SERVICE MANUAL

SANYO

STEREO TURNTABLE

P50 (BLACK)

(EUROPE)



SPECIFICATION

NOTE:
The below mentioned specifications are mainly based on the IHF measurements standard. They can therefore not directly be compared with specifications based on the DIN standard or other standards.

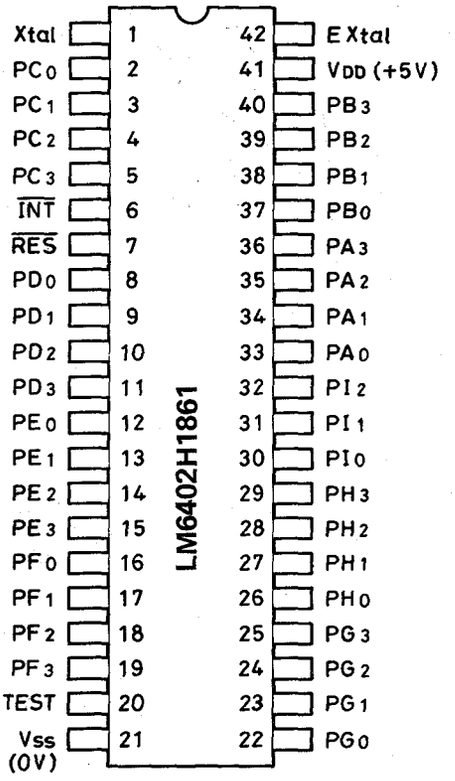
Motor	DC brushless servo motor (for turntable platter) DC motor (for tone arm)
Drive system	Direct drive/Full auto
Speed	33-1/3 and 45 rpm
Wow and flutter	0.05% WRMS
Rumble	−70 dB DIN B spec
Turntable platter	301 mm (11-7/8")
Tone arm	Static-balance linear tracking type
Stylus	0.6 mil diamond stylus (No. ST-P50J)
Frequency response	20 – 20,000 Hz
Channel separation	25 dB (1 kHz)
Power source	AC: 220 V, 50 Hz
Power consumption	15 W
Dimensions (Approx.)	335 (W) x 340 (D) x 104 (H) mm (13-1/8" x 13-3/8" x 4-1/8")
Weight (Approx.)	4.1 kg (9 lbs.)

* Specifications and design are subject to change without notice.

FUNCTIONAL DESCRIPTION

MICROCOMPUTER PORTS AND FUNCTIONS

Port No.	Functions	Actions
$PA_0 \sim PA_3$	Key Scan In	" L " .. Active
$PO_0 \sim PB_3$	Led Scan Out	" H " ...Active
$PC_0 \sim PC_3$	Scan Signal Out	" L " ...Active
PO_2	Flag For The First Title	" H " ...First Title " L " .. Other Title
PD_3	Lifter Plunger (trigger)	" L " .. ON (while 100 msec)
PE_0	Sub Motor (right)	" H " ...ON
PE_1	Sub Motor (left)	" H " .. ON
PE_2	Lifter Plunger (keep)	" L " .. ON
PE_3	Tracking Sensor	" H " .. ON
PF_0	Main Motor	" H " .. START " L " .. STOP
PF_1	Speed	" H " .. 33 rpm " L " .. 45 rpm
PF_2	Muting Relay	" H " .. ON
PF_3	Auto Function Out	" L " .. Active
PG_0	Start SW	" L " .. ON
PG_1	Stop/Clear SW	" L " .. ON
PG_2	Auto Function In	" L " Active
PG_3	Manual-Auto SW	" L " .. Manual " H " Auto
PH_0	Dustcover SW	" L " .. ON (Close) " H " .. OFF (Open)
PH_1	End SW	" L " .. ON (End Position)
PI_0		Normally " L "
PI_1	Reflector (at arm down)	⌐ ... Reflected
PI_2	Reflector (at arm up)	⌐ ... Reflected
INT	Arm Position Counter	⌐ ... Counted



1. KEY SCAN

The microcomputer analyzes the combinations of the four output and input ports (4 x 4 = 16 ports in total) and detects which one of the fifteen buttons (REPEAT, SPEED, INTRO SCAN, etc.,) on the control panel was pressed. The output ports are $PC_0 \sim PC_3$ and the input ports $PA_0 \sim PA_3$ in the chart by Fig. 1.

Input ports $PA_0 \sim PA_3$ are normally kept in " H " (hight) level and output ports $PC_0 \sim PC_3$ output the signals of " L " (low) level in the cycles as Fig. 3. When a port is in " L " level, the other ports are kept in " H " level.

If Button 1 (S200) is pressed and output port PC_0 is set in " L " level, Input port PA_0 becomes " L " level.

If Button 5 (S204) is pressed and output port PC_1 is set in " L " level, Input port PA_0 becomes " L " level.

Thus, the microcomputer analyzes how the input and output ports are combined and detects which button was pressed according to the combination.

2. LED ELECTRODYNAMIC LIGHTING

If the LEDs of D200 ~ D213 were connected as in the Fig. 1, the microcomputer light the proper LED by the combination of each output at the output ports of $PB_0 \sim PB_3$ (" H " level) and $PC_0 \sim PC_3$ (" L " level).

Now, consider that 1, 5, 9, and ▷ in the program LEDs are lit up. In the Fig. 3, while the output port PC_0 is in " L " level for 2.5 msec, the microcomputer outputs " H " level at the output port PB_0 and " L " level at the output ports $PB_1 \sim PB_3$. Secondly, while the output port PC_1 is in " L " level for 2.5 msec, the microcomputer outputs " H " level at the PB_1 and " L " level at the output ports PB_0, PB_2, and PB_3.

Then, while the PC_2 is in " L " level for 2.5 msec, the microcomputer outputs " H " level at the PB_2 and " L " level at the output ports PB_0, PB_1, and PB_3. After that, above is repeated in this order. In other words, during such electrodynamic lightings, the ▷ LED, for example, lights on for 2.5 msec while the PC_3 is in " L " level, and lights off for 7.5 msec until the PC_3 is again in the " L " level.

FUNCTIONAL DESCRIPTION

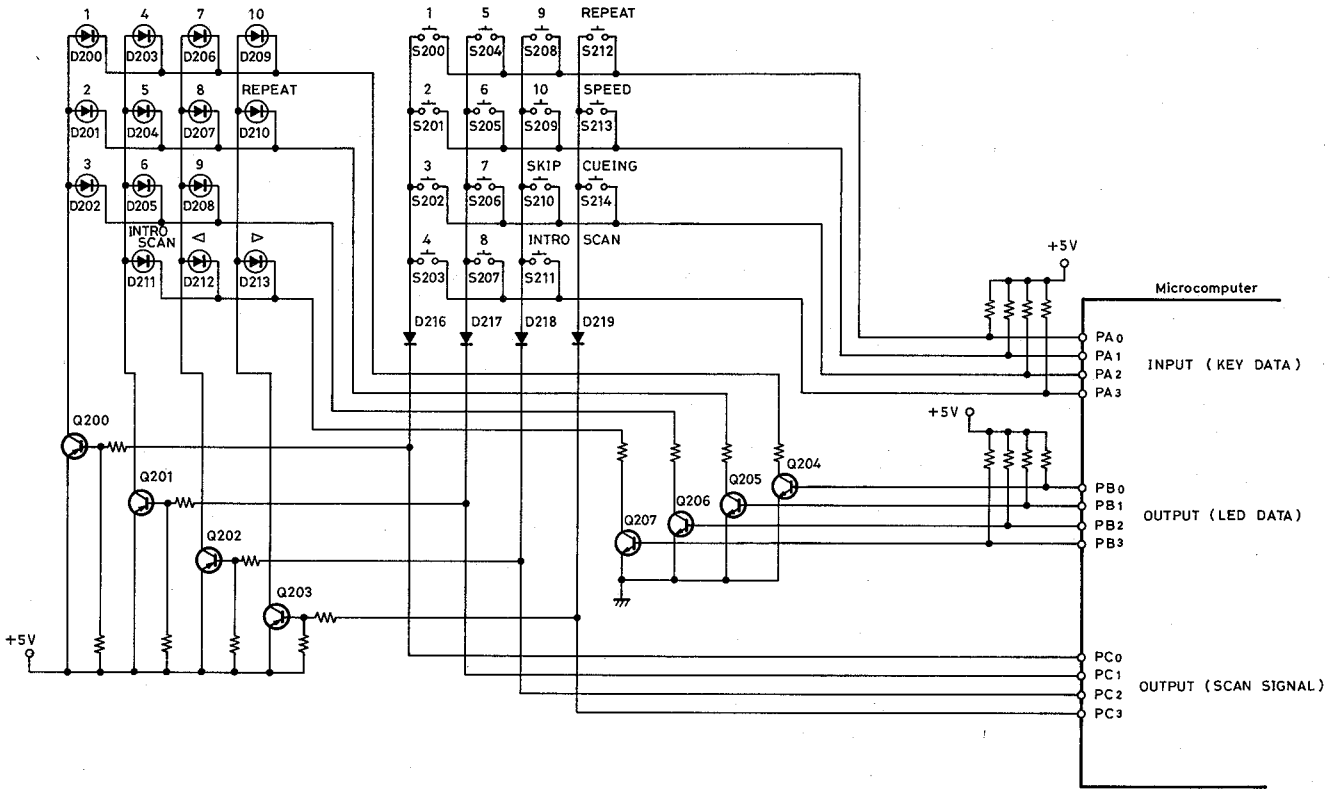


Fig. 1

When the control input is in "H" level, it is conducting between the switch input/output (IN/CUT ◄► OUT/IN), and the impedance is decreased. And when the control input is in "L" level, it is not conducting between the switch input/output, and the impedance is increased.

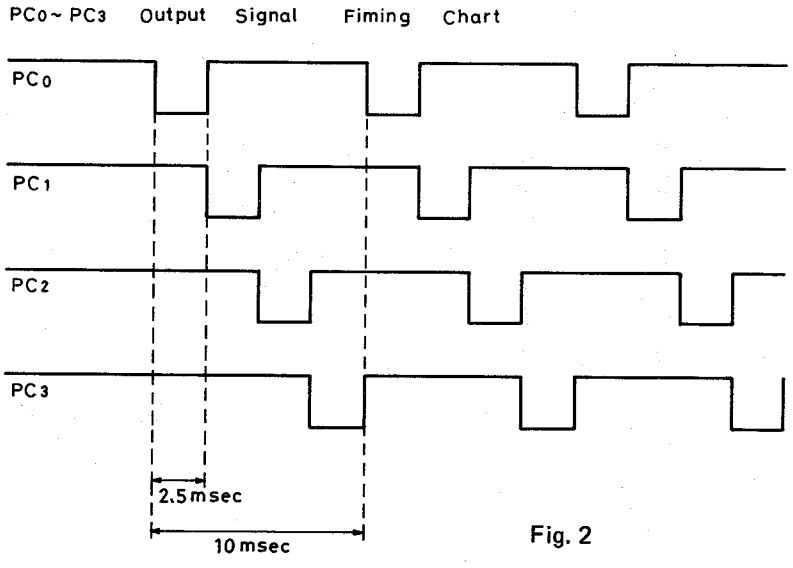


Fig. 2

3. ARM POSITION COUNTER

In this record player, the arm moves between the ending position (the inner circle on the turn table) and the resting position (the outer circle on the turn table).

The microcomputer controls the arm position by the arm position counter. The process is as follows:

An impeller turning with the arm movement switches on/off the pulse count sensor. (Fig. 4)

As a result, a corresponding pulse to the arm position is applied to the microcomputer. The microcomputer increases the arm position count when the arm moves from the ending position to the resting position.

And when the arm moves in the opposite direction, it decreases the arm position count. The arm position is controlled by this value on the arm position counter. The relationship between the arm position and the arm position count is shown in Fig. 3

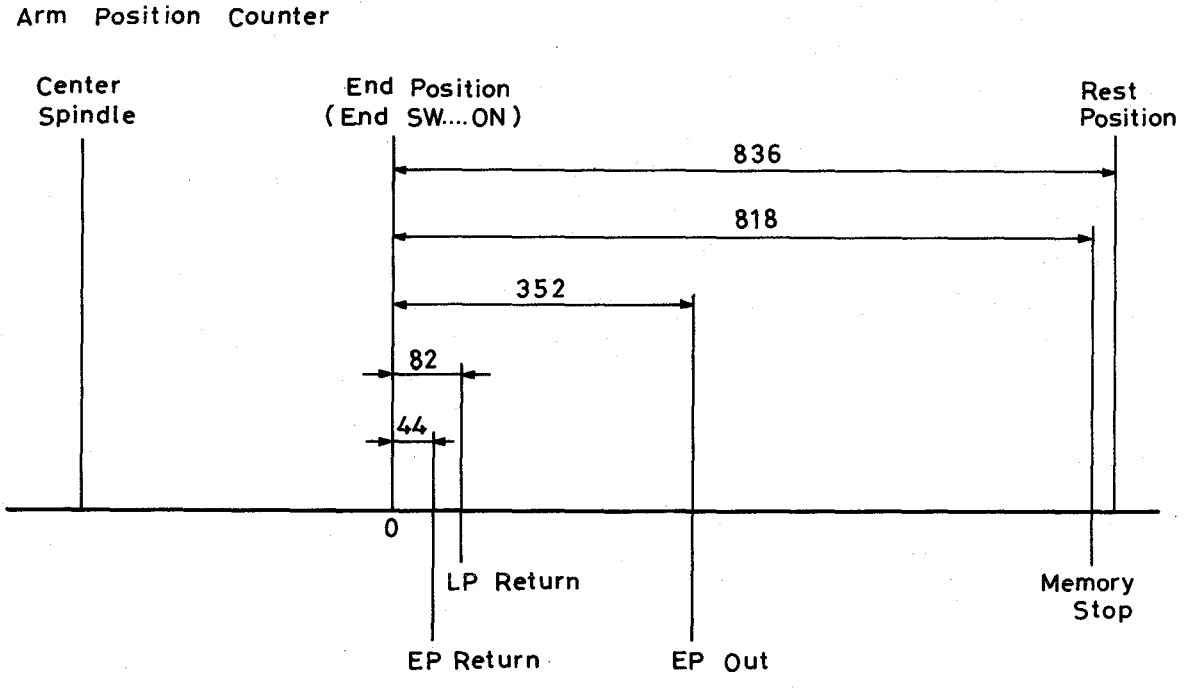


Fig. 3

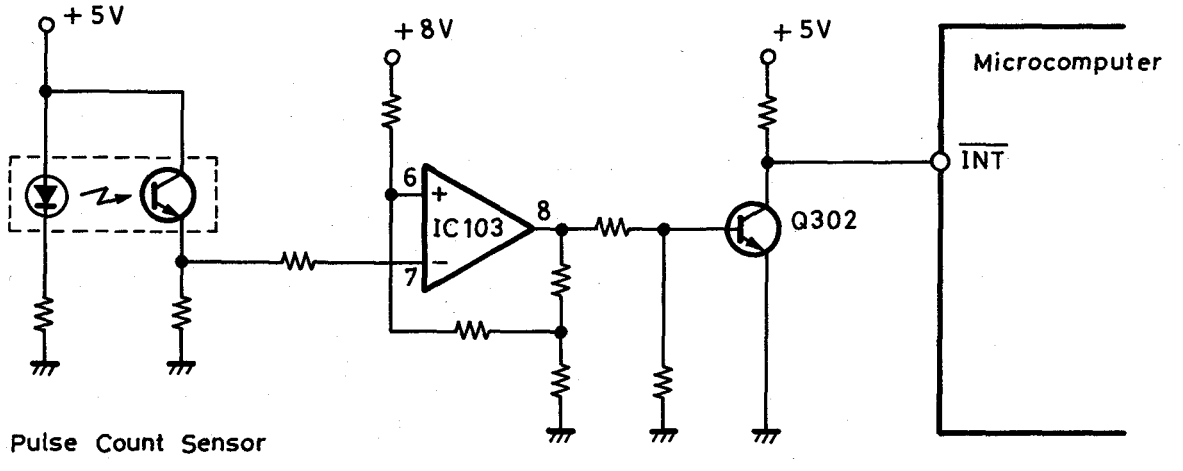


Fig. 4

FUNCTIONAL DESCRIPTION

4. MEMORY ACTION (The sensor switch is at "AUTO" position at this time.)

When the power switch is turned on, or when the dust cover is closed (when the input port PHo becomes " L " level from " H " level), the momory function of this player starts to work. The process is as follows:

The arm travels from the ending position to the resting position and stops. While the arm travels between the return position for LP discs and the memory stop position, the microcomputer memorizes the positions of tunes contained in a disc by the arm position count value, at every reflection time (the time when the input port PI2 changes its " L " level into " H " level). And its order of memory is : Xth tune, (X-1)th tune, ... second tune, and first tune. (X = tune numbers contained in a disc) In the case that the PI2 port is not applied with the reflected input during the arm travels between LP return position to the memory stop position, the microcomputer concludes that there is no disc on the turn table, and doesn't accept any input.

When the arm reaches the memory stop position from the LP return position, if the arm position count applied at the PI2 port at last is within 82 (LP return position) and 352 (EP out position), the microcomputer concluded that the disc on the turntable is a EP disc and lights the 45 r.p.m. lamp of the speed LED.

5. AUTO PLAY POSITION

When the start switch is pressed after the program switches 1 and 3 are pressed, it operates as follows:
(Please refer to Fig. 6)

a. First Tune Play

The microcomputer moves the arm at first to the A point, where is 2mm inner from the B point (memorized first tune position). The arm position count at the A point is 16 counts smaller than that at B point.

1: The microcomputer moves the arm outward and stops it when the PI2 port is applied with an input. (This position is the C point.) During the arm travelling from A point to C point, the arm sensor outputs a reflection signal when the arm passes the B point. And the reflection signal is applied at the PI2 port after T msec, depending on the SVR103 value. As a result, the arm stopps at the C point. This time delay is necessary because there is a gap of 0.1 ~ 0.5mm between the needle point and the optical axis as shown in Fig. 5.

2: After stopping at the C point, the arm descend on a disc and starts to play. (D point) The timing chart at this time is shown in Fig. 7.

3: About 10 sec after the arm descending, if PIo port of the microcomputer is applied with an input of tune ending, it concludes that the first tune has finished and let the arm up. (E point)

4: In above 1:, if there is no input at the PI2 port during the arm travels from A to F, the microcomputer returns the arm to the A point and restarts the operation of 1:. If there is no input after the arm travels from A to F three times, the microcomputer, concluding that the first tune has finishied, moves the arm to the next programmed tune. The F point is 2mm outer from the B point. The arm position count at the F point is 16 counts larger than that at the B point.

b. Third Tune Play

The microcomputer moves the arm at first to the A' point, where is 2mm (16 counts) inner from the B' point (memorized third tune position).

1': The microcomputer moves the arm from the A. point and stops it when the PI2 port is applied with an input. (This position is the C' point.) During the arm travelling between A' and C, the arm sensor outputs a reflection signal when the arm passes the B' position.

And the reflection signal is applied at the PI2 port after T' msec, depending on the SVR104 value. As a result, the arm stopps at the C' point. In the case that the condition of T T' is satisfied by controlling the SVR103 and the SVR104, 1 reflection signal can not be applied at the PI2 port of the microcomputer.

2': After stopping at the C' point, the arm descend on a disc and starts to play. (D' point) The timing chart at this time is shown in Fig. 7.

3': About 10 sec after the arm descending, if PI1 port of the microcomputer is applied with an input of tune ending, it concludes that the first tune has finished and let the arm up. (E' point)

4': In above 1':, if there is no input at the PI2 port during the arm travels from A' to F' , the microcomputer returns the arm to the A' point and restarts the operation of 1' :, If there is no input after the arm travels from A' to F' three times, the microcomputer, concluding that the third tune has finished, moves to the next step.

c. First Tune Play and Following Tunes Play

As explained in a. and b. the basic operations of the auto play function are almost same between the first tune play and the following tunes play. The only difference is a time delay length from when the arm passed the B or B' positions and the arm sensor gives a reflection signal, to when the signal is applied at the PI2 port of the microcomputer. (time delay T or T') This means that the distance from the B (B') point to the C (C') point in Fig. 6. For the first tune play, it should be T (msec), and for the following tunes play, it should be T' (msec), where T' < T.

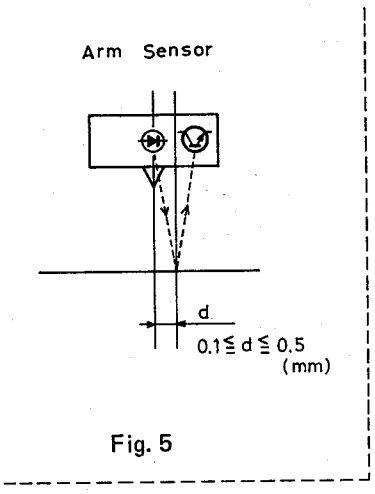


Fig. 5

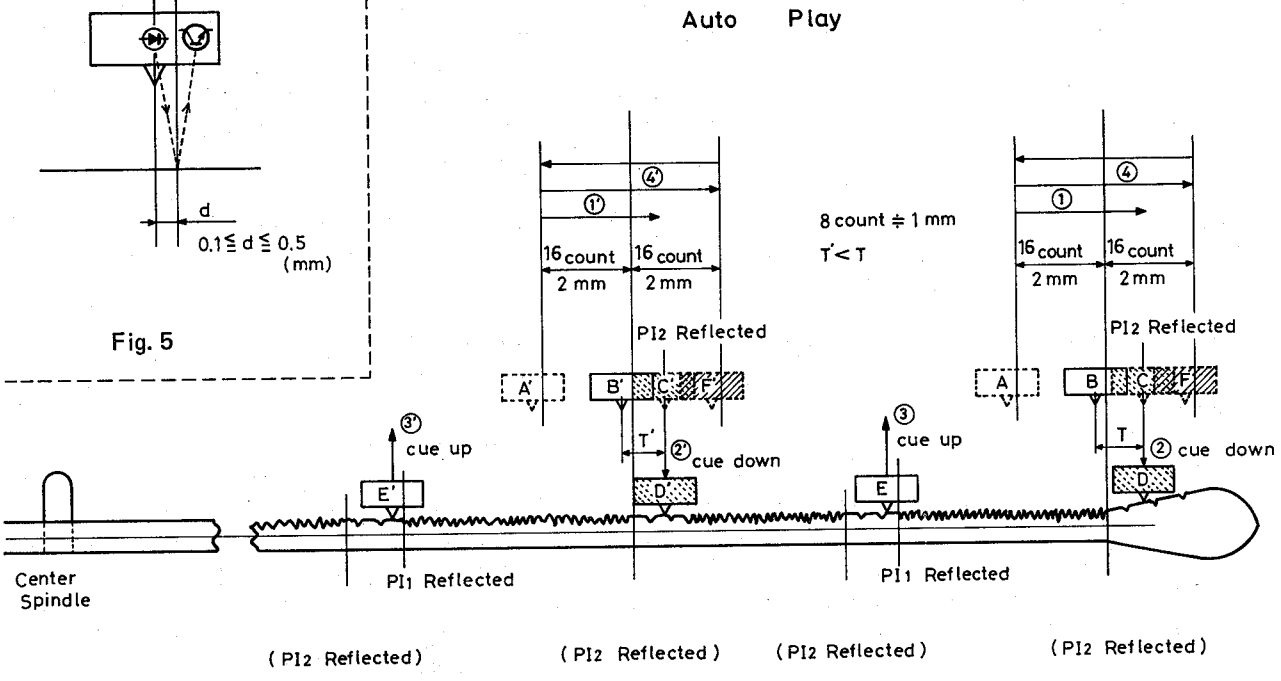


Fig. 6

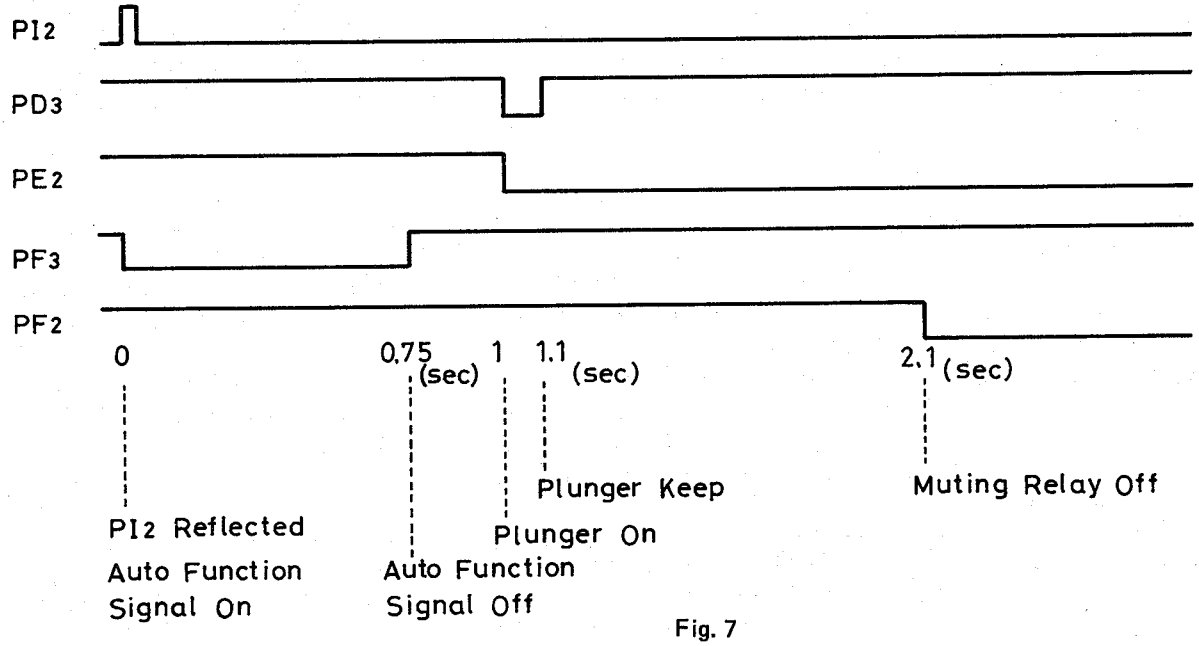


Fig. 7

6. AUTO RETURNING FUNCTION

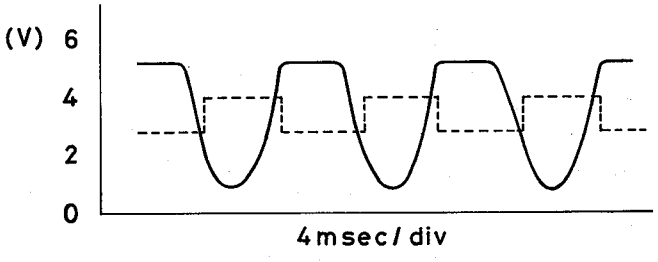
When the arm moves inward with the start switch pressed, or when the arm proceeds beyond the LP return position (for a disc of 30cm or 25cm) or the EP return position (for a disc of 17cm), the arm returns automatically. In other words, the microcomputer direct the auto returning operation when the arm position counter shows a value under 82 count (for LP) or under 44 count (for EP), on playing or on the arm moving inwardly with the start switch pressed.

ADJUSTMENT

1. ADJUSTMENT OF PULSE COUNT SENSOR SENSITIVITY

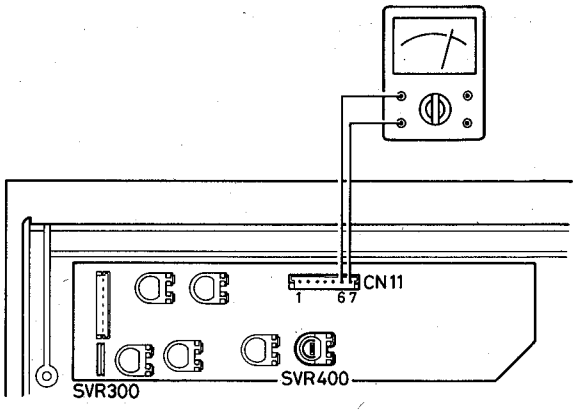
a. When the sensor sensitivity selector is set to the MANUAL position and the power is switched ON, the arm will move to the inner circumference and then move in the direction of the outer circumference.

Adjust SVR300 so that the output waveform (pin 7 or GND) between pins 1 and 7 of CN11 becomes a wave form like the solid line shown in Fig. 8 (upper peak −5V or higher, lower peak 1.8V or lower) while the arm is moving. (If the arm has completely moved to the outer circumference, it can be move to the inner circumference and then to the outer circumference by switching the power from OFF to ON.) When the adjustment is completed, again inner circumference and then to the outer circumference; check to be sure that the arm stops (the sub-motor's pulley stops completely, without slipping) in the vicinity of the outer circumference.



Pulse count sensor output between pins 1 and 7 of CN11.

Fig. 8



2. ADJUSTMENT OF TRACKING

a. Set the sensor sensibility switch at "MANUAL" position. Putting the count disc (RG-325) on the turn table, move the tone arm to the (★) position in the **Fig. 9.**

b. Pull out the 7p socket (SO10) connected to the sub-motor. Stopping the rotating turn table by a slight touch with your hand on the turn table sideways, cue the arm to down. After measuring the voltage between 5 pin and 6 pin in CN11, suppose that the value is E_1(V). (6 pin is on the ground side.)

c. After rotating the turn table (the count disc) 10 turns with your hand off, stop the turn table again with the hand. Measuring the voltage at this time between 5 pin and 6 pin in CN11, suppose that the value is E_2(V).

After measuring the E_2, cue the arm to up.

d. Where $E_1 - E_2 = E_3$, if E_3 is larger than 1.1V, turn the SVR400 counter−clockwise for adjusting E_3 to 1.0V ± 0.1V. Meanwhile, if E_3 is smaller than 0.9V, turn the SVR400 clockwise for adjusting E_3 to 1.0V ± 0.1V.

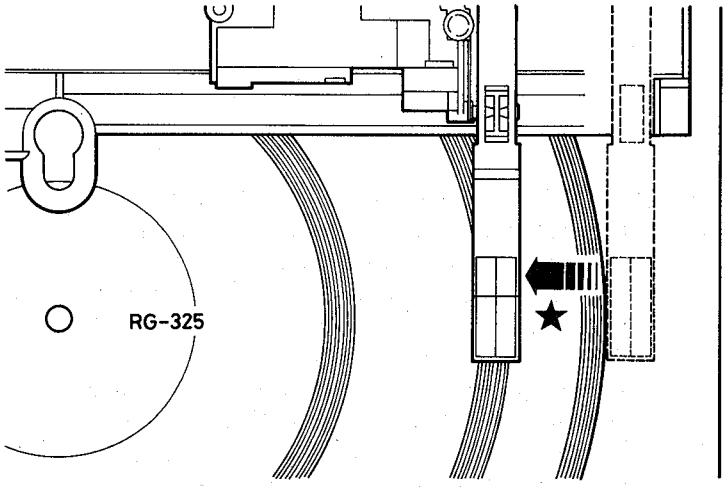


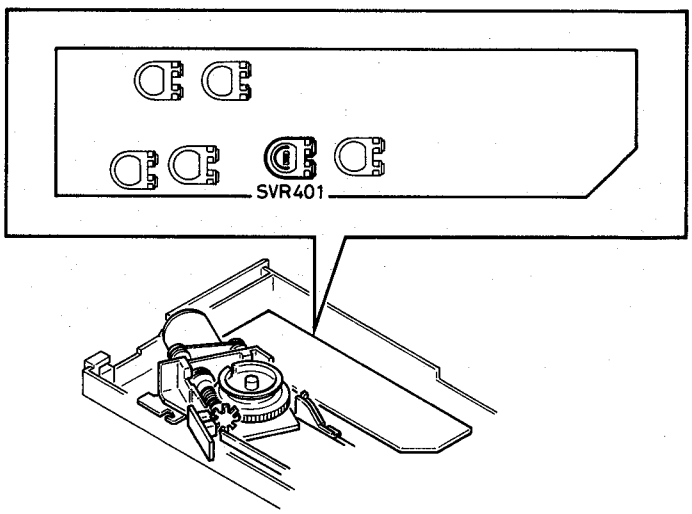
Fig. 9.

3. ADJUSTMENT OF STARTING VOLTAGE FOR SUB−MOTOR

Insert the 7p socket (SO10) disconnected at item 1-b). to the P.C.B. plug (CN10).

Turn the SVR401 fully clockwise to let the cueing arm down.

As show in figure 9, lift up the arm lifter manually and place it on the V-groove of damper lever(M6). Since the sub motor begins to rotate when SVR401 is turned counterclockwise, adjust the SVR401 to just before the rotation starting point.



4. ADJUSTMENT OF NEEDLE HEIGHT

a. Remove the count disc (RG-325) from the turn table. (Only the rubber sheet is on the turn table.) Move the tone arm from the resting position to the position illustrated in the Fig. 10

b. At this position, set the distance between the top surface of the rubber sheet and the cartridge needle point at 5.2 ± 0.3mm by adjusting the bis (A) in the Fig. 10

c. Letting the arm up and down a few times, make sure that the needle height is within 5.2 ± 0.3mm. If it is out of the range, adjust it again as b.

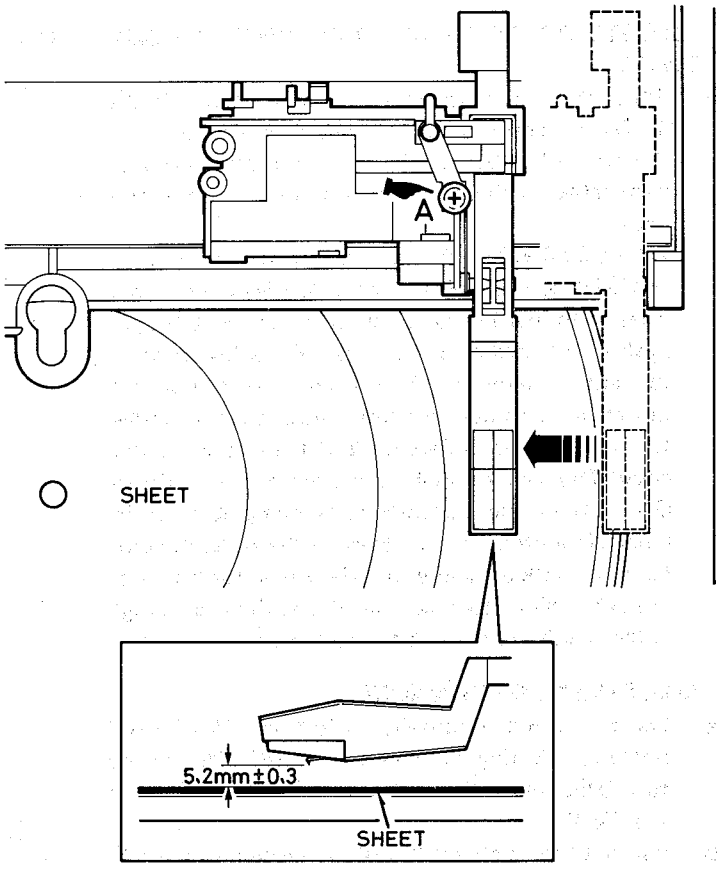


Fig. 10.

5. ADJUSTMENT OF ARM SENSOR SENSIBILITY

a. Manually stop the rotation of the turn table, put the standard reflection board shown in the Fig. 11 on the rubber sheet. Move the tone arm from the resting position to the position illustrated in the Fig. 11, and then, Set the cueing down.

b. In this state of a. , adjust the SVR100 to make the voltage 6V +0.1/—0.05V between 5 pin and 7 pin in the CN11. If the voltage is low even after turning the SVR100 full clockwide, adjust the SVR100 again by cutting the R148 on the 4-280T55572 P.C.B.

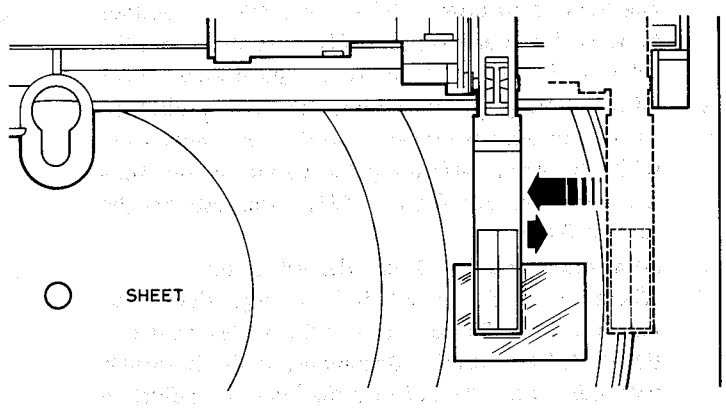
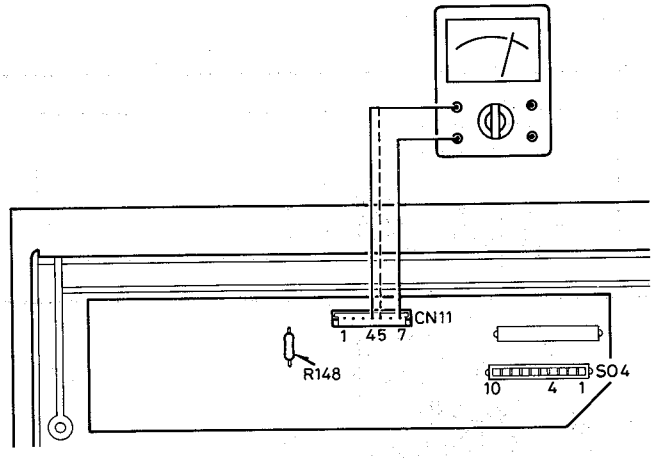
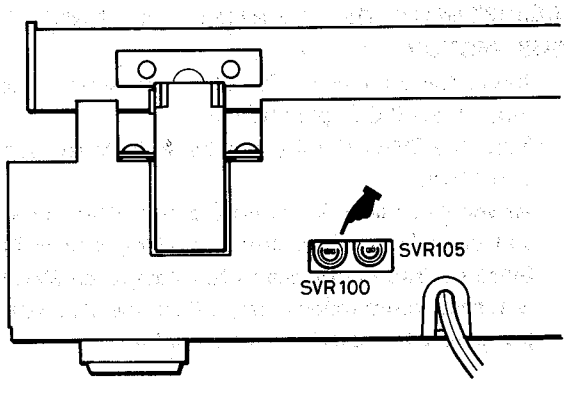


Fig. 11.

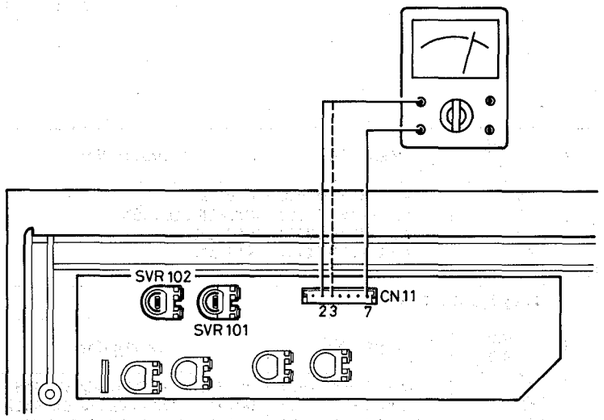




c. Let the cueing up arm on the standard reflection board with stopping the turn table. At this situation, adjust the SVR105 to make the voltage 7V + 0.1/ −0.05V between 4 pin and 7 pin in the CN11.

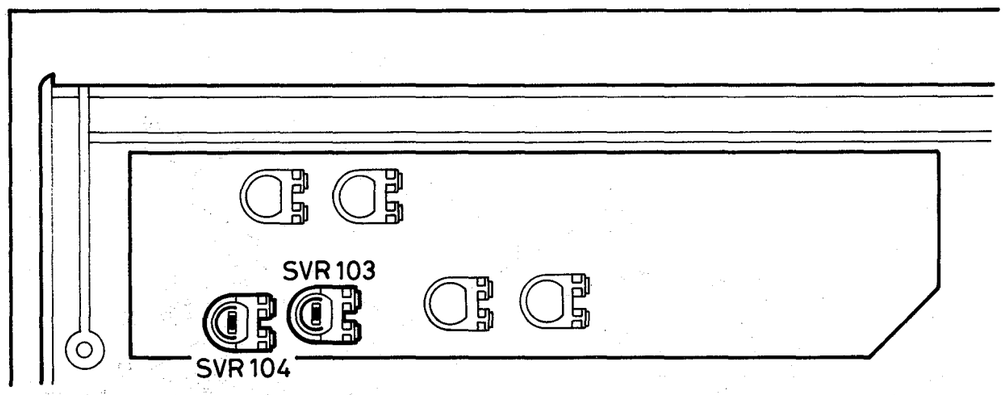
6. ADJUSTMENT OF THRESHOLD OF VOLTAGE

a. Return the tone arm to the resting position by pressing the stop button.
b. Adjust the SVR101 to get the voltage of 6V ± 0.05V between 2 pin and 7 pin of CN11.
c. Adjust the SVR102 to get the voltage of 0.8V ± 0.05V between 3 pin and 7 pin of CN11.



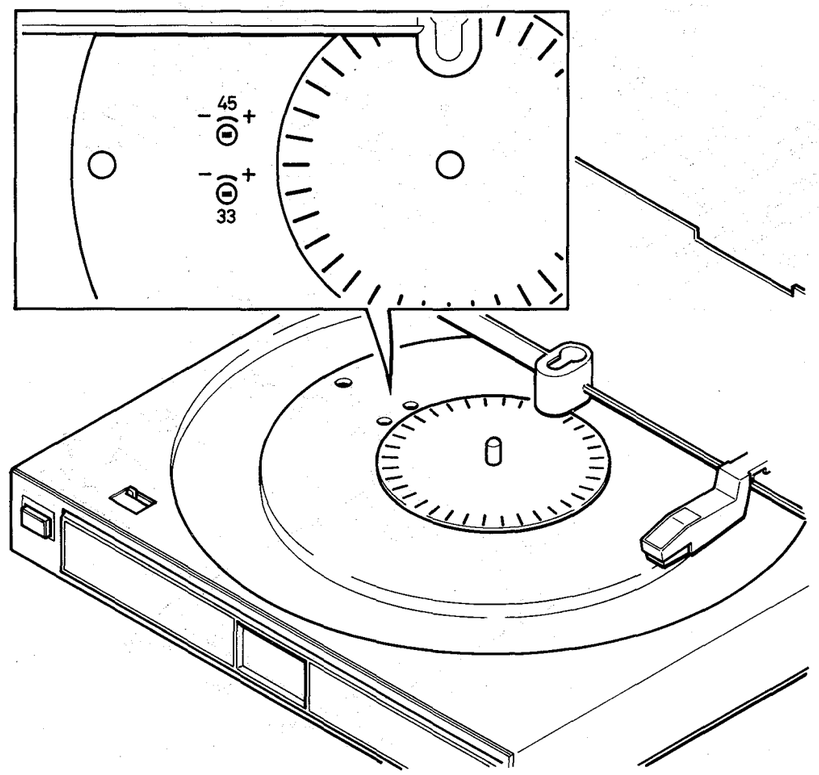
7. ADJUSTMENT OF DELAY

a. Setting the sensor sensibility switch at the "M" position, put the delay adjuster disc 27-3H-31 ("Heart & Soul" by the Chanels; applied with a tape at the first/second tune) on the turn table. Shut the dust cover base.
b. Pressing the 1 and 2 buttons of the program switch, press the repeat switch. Each LED should be lit at this time. By pressing the start switch, the arm goes near the beginning of the third tune of this disc, and starts to play.
c. When the disc starts to play, see if the arm is downed on the silent part between the second / the third tune, or at the beginning of the thired tune.
If so, turn the SVR103 clockwise and press the program 1 switch. As a result, the arm rises and goes down again at the beginning of the third tune, and subsequently the disc starts to play.
d. When the disc starts to play, if the last part of the second tune is played for a while, turn counter-clockwise the SVR103 before pressing the program 1 switch. As a result, the arm rises and goes down again at the beginning of the third tune, and subsequently the disc starts to play.
e. By repeating the procedures of c. and d, adjust the SVR103 for obtaining the play starting point at the ending of the second tune, where the last of the second tune is played just a little and silent part comes.
f. After finishing the above adjustment, press the program 2 switch.
Then the arm rise and comes down around the beginning of the fourth tune, and subsequently the disc starts to play.
g. When the disc starts to play, if the beginning of the fourth tune is played, turn clockwise the SVR104 before pressing the program 2 switch. As a result, the arm rises and goes down again around the fourth tune, and the disc starts to play. Excess clockwise turning of the SVR104 makes the arm remain in the air over the beginning of the fourth tune.
h. When the disc starts to play, if the last part of the third tune is played, or if the arm does not come down, turn counter-clockwise the SVR104 before pressing the program 2 switch. As a result, the arm rises and goes down again around the beginning of the fourth tune, and the disc starts to play.
i. By repeating the above adjustment of g. and h. adjust the SVR104 for making the play starting point at the silent part between the third tune and the fourth tune.

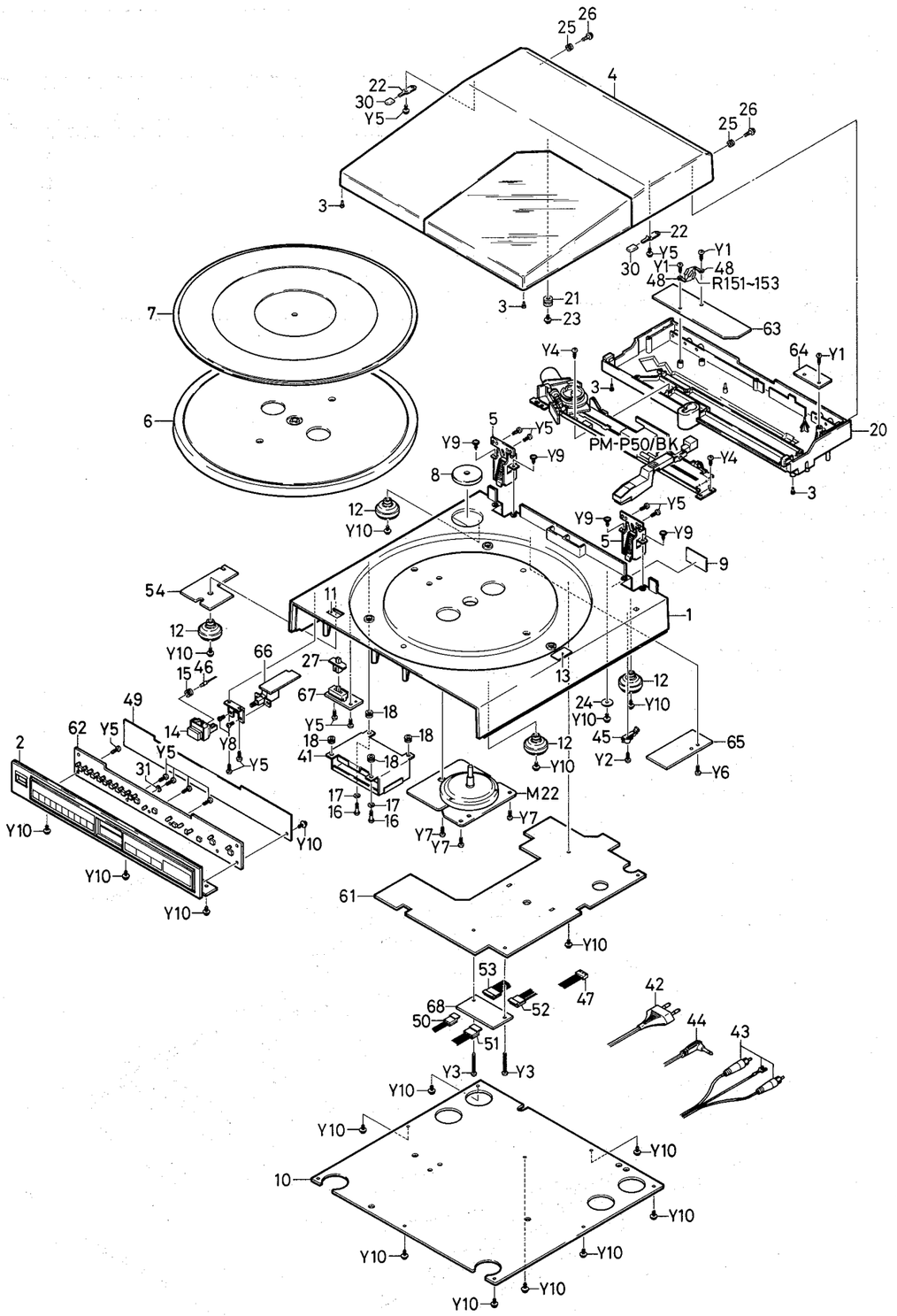


8. ADJUSTMENT OF TURN TABLE R. P. M.

a. Putting a stroboscope on the turn table, move the arm from the resting position for revolving the turn table. After switching its revolution to 33 r.p.m. with the speed switch, adjust the VR33 on the DD motor P.C.B. to the position where the scale line of a stroboscope looks still.
b. After switching its revolution to 45 r.p.m. with the speed switch, adjust the VR45 on the DD motor P.C.B. to the position where the scale line of a stroboscope looks still.



EXPLODED VIEW (CABINET & CHASSIS)



PARTS LIST

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual.
Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

NOTE:
* Materials of Capacitors and Resistors are abbreviated as follows;

AL ELECT	Aluminum Electrolytic
BC CON	Semiconductor Ceramic
CHIP BC	Chip Semiconductor Ceramic
CHIP TAN	Chip Tantal
ELECT	Electrolytic
PP CON	Polypropylene
MT GLAZE	Metal Glaze
FP CARBON	Flameproof Carbon

* Tolerance of Capacitors and Resistors are noted with follow symboles;

J	±5%	P	+100−0%
K	±10%	Q	+30−10%
M	±20%	Z	+80−20%
N	±30%		

PACKING & ACCESSORIES

Ref. No.	Part No.	Description
	141-6-145T-00900	FOAM PLASTIC CASE, RIGHT
	141-6-145T-01000	FOAM PLASTIC CASE, LEFT
	141-6-316T-87300	PAD, TOP
	141-6-133T-57302	INNER CORR CASE
	141-6-235T-50501	INNER POLYE LAMINA COVER, SET
	141-6-317T-87800	PAD, DUST COVER
	141-6-317T-06700	PAD, T.T & RUBBER SHEET
	141-6-231T-35400	INNER POLY COVER, T.T & RUBBER SHEET
	141-6-409T-07400	INST MANUAL

CABINET & CHASSIS

Ref. No.	Part No.	Description
1	141-2-121T-20130	DECK PANEL
2	141-0-122T-54402	FRONT PANEL ASSY
3	141-2-445T-26600	RUBBER CUSHION, DUST COVER
4	141-2-194T-02330	DUST COVER
5	141-2-251T-08500	HINGE
6	141-2-118T-03200	TURN TABLE
7	141-2-247T-30200	SHEET, TURN TABLE
8	141-2-352T-52500	SPACER, 45 ADAPTOR
9	141-2-247T-40730	SHEET ADJUST HOLE COVER
10	141-2-125T-35100	BOTTOM LID
11	141-2-147T-08830	MARKING PLATE, SENS SELECT
12	141-0-174T-11901	STAND ASSY
13	141-6-479T-73800	LABEL, UNTI-REFLECTOR
14	141-0-160T-35212	PUSH BUTTON ASSY, POWER
15	141-2-445T-08701	RUBBER CUSHION, POWER SW
16	141-2-421T-33700	SPECIAL SCREW, P.T MTG
17	141-2-453T-30500	WASHER, GNW 4.1X63X0.13 +
18	141-2-445T-05000	RUBBER CUSHION, PT MTG.
19	141-2-290T-00600	BRACKET, POWER SW MTG.
20	141-2-135T-93530	COVER, DUST COVER
21	141-2-445T-31400	RUBBER CUSHION, DUST COVER
22	141-2-290T-01300	BRACKET, DUST COVER MTG.
23	141-2-421T-24700	SPECIAL SCREW, DUST COVER
24	123-2-453R-10500	PLASTIC WASHER, POWER CORD FIXER
25	141-2-164T-08700	SLIDE KNOB
26	141-2-421T-20900	SPECIAL SCREW
27	141-2-445T-08700	RUBBER CUSHION, DUST COVER-FRAME
28	141-2-352T-69430	SPACER
30	141-2-445T-31300	RUBBER CUSHION
31	141-2-453T-00800	WASHER
32	141-2-453T-02401	WASHER

FIXING PARTS

Ref. No.	Part No.	Description
Y1	BJN2S++3+8+Z1	PAN HD 2 TAPPING SCREW 3X8
Y2	BJN2S++312+Z1	PAN HD 2 TAPPING SCREW 3X12
Y4	BJB2S++3+6+Z1	BIND HD 2 TAPPING SCREW 3X6
Y5	BJB2S++3+8+Z1	BIND HD 2 TAPPING SCREW. 3X8
Y6	BJB2S++310+Z1	BIND HD 2 TAPPING SCREW 3X10
Y7	BJB2S++410+Z1	BIND HD 2 TAPPING SCREW 4X10
Y8	BJX2S++3+6+Z1	PAN HD SCREW W/SPRING WASHER 3X6
Y9	BJX6S++3+8+ZK	PAN WASHER HD 2 TAPPING SCREW 3X8
Y10	BJX6S++310+Z1	PAN WASHER HD 2 TAPPING SCREW 3X10

ELECTRICAL PARTS

Ref. No.	Part No.	Description
41	⚠ 4-300T-85700	P.T
42	⚠ 4-243T-84973	POWER CORD
43	4-243T-20800	LEAD CORD, OUTPUT
44	4-243T-34971	LEAD CORD, SYNCHRO
45	4-238T-81800	SWITCH S218
46	4-612T-16300	LAMP 8V 0.1A (PL1)
47	4-280T-97700	P.C BOARD, LAMP COVER
49	141-2-322T-86000	SHIELD PLATE

CONTROL P.C.BOARD ASSY

Ref. No.	Part No.	Description
61	141-4-280T-55372	P.C BOARD ASSY, CONTROL
	141-2-368T-25000	HEAT SINK
	BJN2S++3+6+Z1	PAN HD 2 TAPPING SCREW 3X6

PARTS LIST

Ref. No.	Part No.	Description
	141-2-381T-04200	BRACKET FUSE (3PC'S)
or	141-2-381T-04202	BRACKET FUSE
	4-237T-00100	TERMINAL BOARD
X300	4-266T-00100	CERAMIC RESONATOR
S08	4-240T-83576	SOCKET 6P
SVR100	4-222T-85880	SEMI VR 500KB
SVR105	4-222T-85877	SEMI VR 50KB
CN4,5	4-240T-11277	SOCKET 10P
CN6	4-240T-11272	SOCKET 5P
CN7	4-240T-78000	SOCKET, D.D. MOTOR
F900-902	4-234T-01771	FUSE 400MA
or	4-234T-10580	FUSE T400MA 250V (3PC'S)
IC100	SILM6402H1861	IC LM6402H1861 DIP42
IC101	SILA6458S++++	IC LA6458S SIP9
IC102	SILA6458S++++	IC LA6458S SIP9
IC103	SILA6458S++++	IC LA6458S SIP9
IC104	SILC4001B++++	IC LC4001B DIP14
IC105	SILC4011B++++	IC LC4011B DIP14
IC106	SILC4011B++++	IC LC4011B DIP14
IC107	SILC4069UB+++	IC LC4069UB DIP14
IC400	SILA6458S++++	IC LA6458S SIP9
Q100	STA608+F++++T	TR 2SA608 F T
Q101	STC536+G+++UT	TR 2SC536 G AUD T NP
Q102	STC536+G+++UT	TR 2SC536 G AUD T NP
Q200	STB698+F+++++	TR 2SB698 F
Q201	STB698+F+++++	TR 2SB698 F
Q202	STB698+F+++++	TR 2SB698 F
Q203	STB698+F+++++	TR 2SB698 F
Q204	STC536+G+++UT	TR 2SC536 G AUD T NP
Q205	STC536+G+++UT	TR 2SC536 G AUD T NP
Q206	STC536+G+++UT	TR 2SC536 G AUD T NP
Q207	STC536+G+++UT	TR 2SC536 G AUD T NP
Q208	STC536+G+++UT	TR 2SC536 G AUD T NP
Q300	STC536+G+++UT	TR 2SC536 G AUD T NP
Q301	STC536+G+++UT	TR 2SC536 G AUD T NP
Q302	STC536+G+++U+	TR 2SC536 G AUD
Q303	STA608+F++++T	TR 2SA608 F T
Q304	STA608+F++++T	TR 2SA608 F T
Q306	STD545+F+++++	TR 2SD545 F
Q307	STD545+F+++++	TR 2SD545 F
Q308	STC536+G+++U+	TR 2SC536 G AUD
Q400	STC536+G+++UT	TR 2SC536 G AUD T NP
Q401	STA608+F++++T	TR 2SA608 F T
Q402	STD400+E+++++	TR 2SD400 E
Q403	STB544+E+++++	TR 2SB544 E
Q404	STC536+G+++UT	TR 2SC536 G AUD T NP
Q405	STC536+G+++UT	TR 2SC536 G AUD T NP
Q500	STC536+G+++U+	TR 2SC536 G AUD
Q501	STC536+G+++U+	TR 2SC536 G AUD
Q502	STA608+F++++T	TR 2SA608 F T
Q503	STC536+G+++UT	TR 2SC536 G AUD T NP
Q900	STD330+E+++++	TR 2SD330 E
Q901	STB514+E+++++	TR 2SB514 E
Q902	STD330+E+++++	TR 2SD330 E
Q903	STC536+G+++UT	TR 2SC536 G AUD T NP
Q904	STA608+F++++T	TR 2SA608 F T
Q905	STD400+E+++++	TR 2SD400 E
Q906	STD545+F+++++	TR 2SD545 F
D100	SDDS442+X+++T	DIODE DS442 X
D101	SDDS442+X+++T	DIODE DS442 X
D102	SDDS442+X+++T	DIODE DS442 X
D103	SDDS442+X+++T	DIODE DS442 X
D104	SDDS442+X+++T	DIODE DS442 X
D105	SDDS442+X+++T	DIODE DS442 X
D106	SDDS442+X+++T	DIODE DS442 X
D216	SDDS442+X+++T	DIODE DS442 X
D217	SDDS442+X+++T	DIODE DS442 X
D218	SDDS442+X+++T	DIODE DS442 X
D219	SDDS442+X+++T	DIODE DS442 X
D400	SDDS442+X+++T	DIODE DS442 X
D401	SDDS442+X+++T	DIODE DS442 X
D402	SDDS442+X+++T	DIODE DS442 X
D500	SDGZA091Z++++	ZENER DIODE GZA9.1Z

Ref. No.	Part No.	Description
D900-907	SDDSF10+B+++T	DIODE DSF10 B T
or	SDDS135+E++++	DIODE DS135 E
D908	SDGZA180Z++++	ZENER DIODE GZA18Z
D909	SDGZA082Z++++	ZENER DIODE GZA8.2Z
D910	SDGZA082Z++++	ZENER DIODE GZA8.2Z
D911	SDGZA056Z++++	ZENER DIODE GZA5.6Z
or	SDGZA056Z+++T	ZENER DIODE GZA5.6Z
D912	SDGZA130Y++++	ZENER DIODE GZA13Y
D	SDDSF10+B+++T	DIODE DSF10 B T
C100	CE+50474MRHAF	ELECT 0.47MF 50V M R HA F
C101	CE+50474MRHAF	ELECT 0.47MF 50V M R HA F
C102	CE+50225MRHAF	ELECT 2.2MF 50V M R HA F
C103	CE+25475MRHAF	ELECT 4.7MF 25V M R HA F
C104	CE+25475MRHAF	ELECT 4.7MF 25V M R HA F
C105	CE+16106MRHAF	ELECT 10MF 16V M R HA F
C106	CC+50103ZRZFF	CERAMIC 0.01MF 50V Z R ZF
C107	CE+50105MRHAF	ELECT 1MF 50V M R HA F
C108	CC+50223ZRZFF	CERAMIC 0.022MF 50V Z R ZF
C109	CC+50103ZRZFF	CERAMIC 0.01MF 50V Z R ZF
C110	CE+50224MRHAF	ELECT 0.22MF 50V M R HA F
C111	CE+25475MVHAS	ELECT 4.7MF 25V M V HA S
C112	CC+50103ZRZFF	CERAMIC 0.01MF 50V Z R ZF
C113	CC+50103ZRZFF	CERAMIC 0.01MF 50V Z R ZF
C114	CC+50103ZRZFF	CERAMIC 0.01MF 50V Z R ZF
C115	CC+50103ZRZFF	CERAMIC 0.01MF 50V Z R ZF
C116	CC+50472KRYBF	CERAMIC 0.0047MF 50V K RYB
C117	CC+50103ZRZFF	CERAMIC 0.01MF 50V Z R ZF
C118	CC+50103ZRZFF	CERAMIC 0.01MF 50V Z R ZF
C200	CC+50223ZRZFF	CERAMIC 0.022MF 50V Z R ZF
C201	CC+50223ZRZFF	CERAMIC 0.022MF 50V Z R ZF
C202	CC+50223ZRZFF	CERAMIC 0.022MF 50V Z R ZF
C203	CC+50223ZRZFF	CERAMIC 0.022MF 50V Z R ZF
C204	CC+50223ZRZFF	CERAMIC 0.022MF 50V Z R ZF
C205	CC+50223ZRZFF	CERAMIC 0.022MF 50V Z R ZF
C206	CC+50223ZRZFF	CERAMIC 0.022MF 50V Z R ZF
C207	CC+50223ZRZFF	CERAMIC 0.022MF 50V Z R ZF
C208	CC+50223ZRZFF	CERAMIC 0.022MF 50V Z R ZF
C209	CC+50223ZRZFF	CERAMIC 0.022MF 50V Z R ZF
C210	CC+50223ZRZFF	CERAMIC 0.022MF 50V Z R ZF
C211	CC+50223ZRZFF	CERAMIC 0.022MF 50V Z R ZF
C300	CC+50221KRYBF	CERAMIC 220PF 50V K R YB
C301	CC+50221KRYBF	CERAMIC 220PF 50V K R YB
C302	CE+16106MRHAF	ELECT 10MF 16V M R HA F
C303	CE+25475MRHAF	ELECT 4.7MF 25V M R HA F
C304	CC+50103ZDZFS	CERAMIC 0.01MF 50V Z D ZF
C305	CC+50223ZRZFF	CERAMIC 0.022MF 50V Z R ZF
C306	CC+50223ZRZFF	CERAMIC 0.022MF 50V Z R ZF
C307	CC+50223ZRZFF	CERAMIC 0.022MF 50V Z R ZF
C308	CC+50223ZRZFF	CERAMIC 0.022MF 50V Z R ZF
C402	CC+50102ZDYBS	CERAMIC 0.001MF 50V Z D YB
C403	CC+50102ZDYBS	CERAMIC 0.001MF 50V Z D YB
C500	CE+50474MRHAF	ELECT 0.47MF 50V M R HA F
C900-907	CC+50103ZRZFF	CERAMIC 0.01MF 50V Z R ZF
C908	CE+35108MVHAS	ELECT 1000MF 35V M V HA S
C909	CE+25476MRHAF	ELECT 47MF 25V M R HA F
C910	CE+25477MVHAS	ELECT 470MF 25V M V HA S
C911	CE+25228MVHSS	ELECT 2200MF 25V M V HS
C912	CE+25228MVHSS	ELECT 2200MF 25V M V HS
C913	CE+16336MRHAF	ELECT 33MF 16V M R HA F
C914	CE+16336MRHAF	ELECT 33MF 16V M R HA F
C915	CE+16477MVHAS	ELECT 470MF 16V M V HA S
C916	CE+16477MVHAS	ELECT 470MF 16V M V HA S
C917	CE+10107MRHAF	ELECT 100MF 10V M R HA F
C918	CC+50103ZRZFF	CERAMIC 0.01MF 50V Z R ZF
C919	CE+25475MRHAF	ELECT 4.7MF 25V M R HA F
C	CC+50103ZRZFF	CERAMIC 0.01MF 50V Z R ZF
R102	RC/+4473JT++R	CARBON T 47K OHM J1/4WR25
R103	RC/+4104JT++R	CARBON T 100KOHM J1/4WR25
R104	RC/+4473JT++R	CARBON T 47K OHM J1/4WR25
R105	RC/+4473JT++R	CARBON T 47K OHM J1/4WR25
R106	RC/+4274JT++R	CARBON T 270KOHM J1/4WR25
R107	RC/+4104JT++R	CARBON T 100KOHM J1/4WR25
R108	RC/+4224JT++R	CARBON T 220KOHM J1/4WR25
R109	RC/+4333JT++R	CARBON T 33K OHM J1/4WR25

PARTS LIST

Ref. No.	Part No.	Description
R110	RC/+4274JT++R	CARBON T 270KOHM J1/4WR25
R111	RC/+4473JT++R	CARBON T 47K OHM J1/4WR25
R112	RC/+4104JT++R	CARBON T 100KOHM J1/4WR25
R113	RC/+4682JT++R	CARBON T 6.8KOHM J1/4WR25
R114	RC/+4682JT++R	CARBON T 6.8KOHM J1/4WR25
R115	RC/+4394JT++R	CARBON T 390KOHM J1/4WR25
R116	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R117	RC/+4104JT++R	CARBON T 100KOHM J1/4WR25
R118	RC/+4224JT++R	CARBON T 220KOHM J1/4WR25
R119	RC/+4223JT++R	CARBON T 22K OHM J1/4WR25
R120	RC/+4104JT++R	CARBON T 100KOHM J1/4WR25
R121	RC/+4333JT++R	CARBON T 33K OHM J1/4WR25
R122	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R123	RC/+4104JT++R	CARBON T 100KOHM J1/4WR25
R124	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R125	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R126	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R127	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R128	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R129	RC/+4225JT++R	CARBON T 2.2MOHM J1/4WR25
R130	RC/+4105JT++R	CARBON T 1M OHM J1/4WR25
R131	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R132	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R133	RC/+4102JT++R	CARBON T 1K OHM J1/4WR25
R134	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R135	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R136	RC/+4395JT++R	CARBON T 3.9MOHM J1/4WR25
R137	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R138	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R139	RC/+4104JT++R	CARBON T 100KOHM J1/4WR25
R140	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R141	RC/+4105JT++R	CARBON T 1M OHM J1/4WR25
R142	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R143	RC/+4104JT++R	CARBON T 100KOHM J1/4WR25
R144	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R145	RC/+4684JT++R	CARBON T 680KOHM J1/4WR25
R146	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R149	RC/+4104JT++R	CARBON T 100KOHM J1/4WR25
R200	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R201	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R202	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R203	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R204	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R205	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R206	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R207	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R208	RC/+4680JT++R	CARBON T 68 OHM J1/4WR25
R209	RC/+4680JT++R	CARBON T 68 OHM J1/4WR25
R210	RC/+4680JT++R	CARBON T 68 OHM J1/4WR25
R211	RC/+4680JT++R	CARBON T 68 OHM J1/4WR25
R212	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R213	RC/+4392JT++R	CARBON T 3.9KOHM J1/4WR25
R214	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R215	RC/+4392JT++R	CARBON T 3.9KOHM J1/4WR25
R216	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R217	RC/+4392JT++R	CARBON T 3.9KOHM J1/4WR25
R218	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R219	RC/+4392JT++R	CARBON T 3.9KOHM J1/4WR25
R220	RC/+4102JT++R	CARBON T 1K OHM J1/4WR25
R221	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R222	RC/+4102JT++R	CARBON T 1K OHM J1/4WR25
R223	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R224	RC/+4561JT++R	CARBON T 560 OHM J1/4WR25
R225	RC/+4682JT++R	CARBON T 6.8KOHM J1/4WR25
R226	RC/+4122JT++R	CARBON T 1.2KOHM J1/4WR25
R227	RC/+4471JT++R	CARBON T 470 OHM J1/4WR25
R228	RC/+4102JT++R	CARBON T 1K OHM J1/4WR25
R229	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R230	RC/+4102JT++R	CARBON T 1K OHM J1/4WR25
R231	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R232	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R233	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R234	RC/+4102JT++R	CARBON T 1K OHM J1/4WR25

Ref. No.	Part No.	Description
R300	RC/+4105JT++R	CARBON T 1M OHM J1/4WR25
R301	RC/+4822JT++R	CARBON T 8.2KOHM J1/4WR25
R302	RC/+4182JT++R	CARBON T 1.8KOHM J1/4WR25
R303	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R304	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R307	RC/+4473JT++R	CARBON T 47K OHM J1/4WR25
R308	RC/+4224JT++R	CARBON T 220KOHM J1/4WR25
R309	RC/+4154JT++R	CARBON T 150KOHM J1/4WR25
R310	RC/+4682JT++R	CARBON T 6.8KOHM J1/4WR25
R311	RC/+4122JT++R	CARBON T 1.2KOHM J1/4WR25
R312	RC/+4104JT++R	CARBON T 100KOHM J1/4WR25
R313	RC/+4333JT++R	CARBON T 33K OHM J1/4WR25
R314	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R315	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R316	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R317	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R318	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R319	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R320	RC/+4681JT++R	CARBON T 680 OHM J1/4WR25
R321	RC/+4561JT++R	CARBON T 560 OHM J1/4WR25
R322	RM++1560JS+++	METAL S 56 OHM J 1W
R402	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R403	RC/+4104JT++R	CARBON T 100KOHM J1/4WR25
R404	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R405	RC/+4225JT++R	CARBON T 2.2MOHM J1/4WR25
R406	RC/+4225JT++R	CARBON T 2.2MOHM J1/4WR25
R407	RC/+4225JT++R	CARBON T 2.2MOHM J1/4WR25
R408	RC/+4225JT++R	CARBON T 2.2MOHM J1/4WR25
R409	RC/+4563JT++R	CARBON T 56K OHM J1/4WR25
R410	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R411	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R412	RC/+4224JT++R	CARBON T 220KOHM J1/4WR25
R413	RC/+4224JT++R	CARBON T 220KOHM J1/4WR25
R414	RC/+4474JT++R	CARBON T 470KOHM J1/4WR25
R415	RC/+4474JT++R	CARBON T 470KOHM J1/4WR25
R416	RC/+4102JT++R	CARBON T 1K OHM J1/4WR25
R417	RC/+4473JT++R	CARBON T 47K OHM J1/4WR25
R418	RC/+4473JT++R	CARBON T 47K OHM J1/4WR25
R419	RC/+4223JT++R	CARBON T 22K OHM J1/4WR25
R420	RC/+4223JT++R	CARBON T 22K OHM J1/4WR25
or	RC/+4393JP++R	CARBON P 39K OHM J1/4WR25
R421	RC/+4272JT++R	CARBON T 2.7KOHM J1/4WR25
R500	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R501	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R502	RC/+4823JT++R	CARBON T 82K OHM J1/4WR25
R503	RC/+4822JT++R	CARBON T 8.2KOHM J1/4WR25
R504	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R505	RC/+4104JT++R	CARBON T 100KOHM J1/4WR25
R506	RC/+4122JT++R	CARBON T 1.2KOHM J1/4WR25
R507	RC/+4104JT++R	CARBON T 100KOHM J1/4WR25
R508	RC/+4333JT++R	CARBON T 33K OHM J1/4WR25
R900	RC/+2102KP+++	CARBON P 1K OHM K 1/2W
R901	RC/+2102KP+++	CARBON P 1K OHM K 1/2W
R902	RC/+2102KP+++	CARBON P 1K OHM K 1/2W
R903	RC/+4681JT++R	CARBON T 680 OHM J1/4WR25
R904	RC/+4152JT++R	CARBON T 1.5KOHM J1/4WR25

CONTROL SW LED P.C.BOARD ASSY

Ref. No.	Part No.	Description
62	141-4-280T-55400	P.C BOARD ASSY, CONTROL SW LED
	4-240T-87200	SOCKET
	4-240T-87300	SOCKET
	4-240T-93400	SOCKET
S200-216	4-238T-70873	SWITCH
or	4-238T-90173	SWITCH
D200	SLSLP180FB50R	LED SLP180F-50 B RE
D210	SLSLP180FB50R	LED SLP180F-50 B RE
D211	SLSLP280FB50G	LED SLP280F-50 B GR
D215	SLSLP280FB50G	LED SLP280F-50 B GR

PARTS LIST

CONTROL VR P.C.BOARD ASSY

Ref. No.	Part No.	Description
63	141-4-280T-55572	P.C BOARD ASSY, CONTROL VR
L100	4-253T-14832	FILTER 100UH
S04,05	4-240T-83580	SOCKET 10P
SVR101	4-222T-97579	VR
SVR102	4-222T-97574	VR
SVR103	4-222T-97579	VR
SVR104	4-222T-97580	VR
SVR300	4-222T-85775	SEMI VR
SVR400	4-222T-97576	VR
SVR401	4-222T-97576	VR
CN9	4-236T-24477	PLUG
CN10	4-236T-24477	PLUG
CN11	4-236T-24477	PLUG
C119	CC+50223ZRZFF	CERAMIC 0.022MF 50V Z R ZF
C120	CC+50392KRYBF	CERAMIC 0.0039MF 50V K RYB
C401	CW+16226MVNPS	NONPOLAR 22MF 16V M V NP
R100	RC/+4331JT++R	CARBON T 330 OHM J1/4WR25
R101	RC/+4564JT++R	CARBON T 560KOHM J1/4WR25
R148	RC/+4274JT++R	CARBON T 270KOHM J1/4WR25
R305	RC/+4473JT++R	CARBON T 47K OHM J1/4WR25
R306	RC/+4151JT++R	CARBON T 150 OHM J1/4WR25
R400	RC/+4561JT++R	CARBON T 560 OHM J1/4WR25
R401	RC/+4561JT++R	CARBON T 560 OHM J1/4WR25

OUTPUT RELAT P.C.BOARD ASSY

Ref. No.	Part No.	Description
64	141-4-280T-55600	P.C BOARD ASSY, OUTPUT RELAY
	4-240T-83575	SOCKET 5P
RL300	4-232T-07571	RELAY
D301	SDDS442+X+++T	DIODE DS442 X

AC POWER P.C.BOARD ASSY

Ref. No.	Part No.	Description
65	141-4-280T-55700	P.C BOARD ASSY, AC POWER
	4-237T-00100	TERMINAL BOARD
	141-2-382T-18900	TERMINAL

POWER SW P.C.BOARD ASSY

Ref. No.	Part No.	Description
66	141-4-280T-55800	P.C BOARD ASSY, POWER SW
	4-237T-00100	TERMINAL BOARD
S1	4-238T-64200	SWITCH, POWER
C1	4-223T-12100	CAPACITOR

CONTROL SENS. SELECT P.C.BOARD ASSY

Ref. No.	Part No.	Description
67	141-4-280T-94200	P.C BOARD ASSY, CONTROL SENS. SELECT
	4-240T-83576	SOCKET 6P
S100	4-238T-94900	SWITCH

PARTS LIST

MECHANISM

Ref. No.	Part No.	Description
M1	141-2-732T-25800	SLIDE, ARM BASE
M2	141-2-853T-48900	SPRING PLATE, STYLUS HEIGHT ADJUST
M3	123-2-472R-00401	LUG, ARM GROUND
M4	141-2-210T-47500	BRACKET, PLUNGER
M5	141-2-740T-16800	LEVER, PLUNGER LINKAGE
M6	141-0-740T-02401	LEVER ASSY, DUMPER
M7	141-2-448T-19200	CUSHION
M8	4-264T-12600	MAGNETIC COIL, CUEING
M9	141-2-445T-08701	RUBBER CUSHION, ROPE (M30) GUIDE
M10	4-240T-77800	SOCKET, CN9
M11	141-0-210T-47700	BRACKET ASSY, DRIVE
M12	141-2-581T-31000	GEAR, DRUM
M13	141-2-453T-30001	WASHER, GNW1.7X3.2X0.25T, DRUM
M14	141-2-453T-30102	WASHER, GNW2.1X4X0.5T, DRUM
M15	141-0-661T-42520	PULLEY ASSY, WORM GEAR W/PULLEY
M16	141-2-210T-50300	BRACKET, PULLEY (M15) STOPPER
M17	141-2-453T-30100	WASHER, GNW2.1X4X0.13T, PULLEY THRUST
M18	141-2-328T-06600	SHIELD LIGHT, SLIT FOR PULSE COUNT
M19	4-240T-77900	SOCKET, PULSE SENSOR-SUB MOTOR
M20	4-238T-72100	SWITCH, ARM REST
M21	4-527T-70000	BRUSHLESS MOTOR, MAIN
M22	4-527T-18902	COMMUTATE MOTOR ASSY, SUB, MECHANISM DRIVE
M23	141-2-378T-16200	BRACKET MOTOR, SUB MOTOR (M22)
M24	141-2-445T-08700	RUBBER CUSHION, SUB MOTOR (M22)
M25	141-2-421T-55800	SPECIAL SCREW, BRACKET MOTOR (M23)
M26	141-2-564T-34600	SQUARE BELT, SUB MOTOR (M22)
M27	141-2-529T-01000	RAIL, ARM SKID
M28	141-2-210T-47600	BRACKET, ROPE GUIDE
M29	141-2-210T-47800	BRACKET, PULLEY (M32) STOPPER
M30	141-2-340T-02531	ROPE, 0.25X700
M31	141-2-856T-21400	SPRING COIL, ROPE FIXER
M32	141-2-661T-41900	PULLEY, BRACKET (M29) MTG
M33	141-2-290T-00800	BRACKET, PCB (M42) MTG.

Ref. No.	Part No.	Description
Y3	BJX2S++2+4+Z1	PAN HD SCREW W/SPRING WASHER 2X4, MAGNETIC COIL (M8)
Y4	BJN2S2R6+6+Z1	PAN HD 2 TAPPING SCREW 2.6X6
Y5	BJSWS2R6+6+Z1	PAN WASHER HD 2 SPECIAL FORMIMG SCREW 2.6X6, BRACKET (M33)
Y6	BJSTS2R610+Z1	PAN HD 2 SPECIAL FORMING SCREW 2.6X10, SPRING PLATE (M2)
Y7	BJTMS++3+6+ZK	HEADLESS SCREW 3X6, SENSOR ADJUST
Y8	WJKWS2R6Y10Z1	WASHER 2.6X8X1T, ROPE (M30)
Y9	BJN2S2R6+8+Z1	PAN HD 2 TAPPING SCREW 2.6X8, ARM FIXER

ARM ASSY

Ref. No.	Part No.	Description
M50	141-0-743T-09201	ARM ASSY
A	141-2-743T-09201	ARM
B	4-156T-03700	NEEDLE CARTRIDGE
C	141-2-135T-94700	COVER

TRACKING SENSOR P.C.BOARD ASSY

Ref. No.	Part No.	Description
M41	4-202T-51400	PHOTO INTERRUPTER
	141-4-280T-49300	P.C BOARD ASSY, TRACKING SENSOR

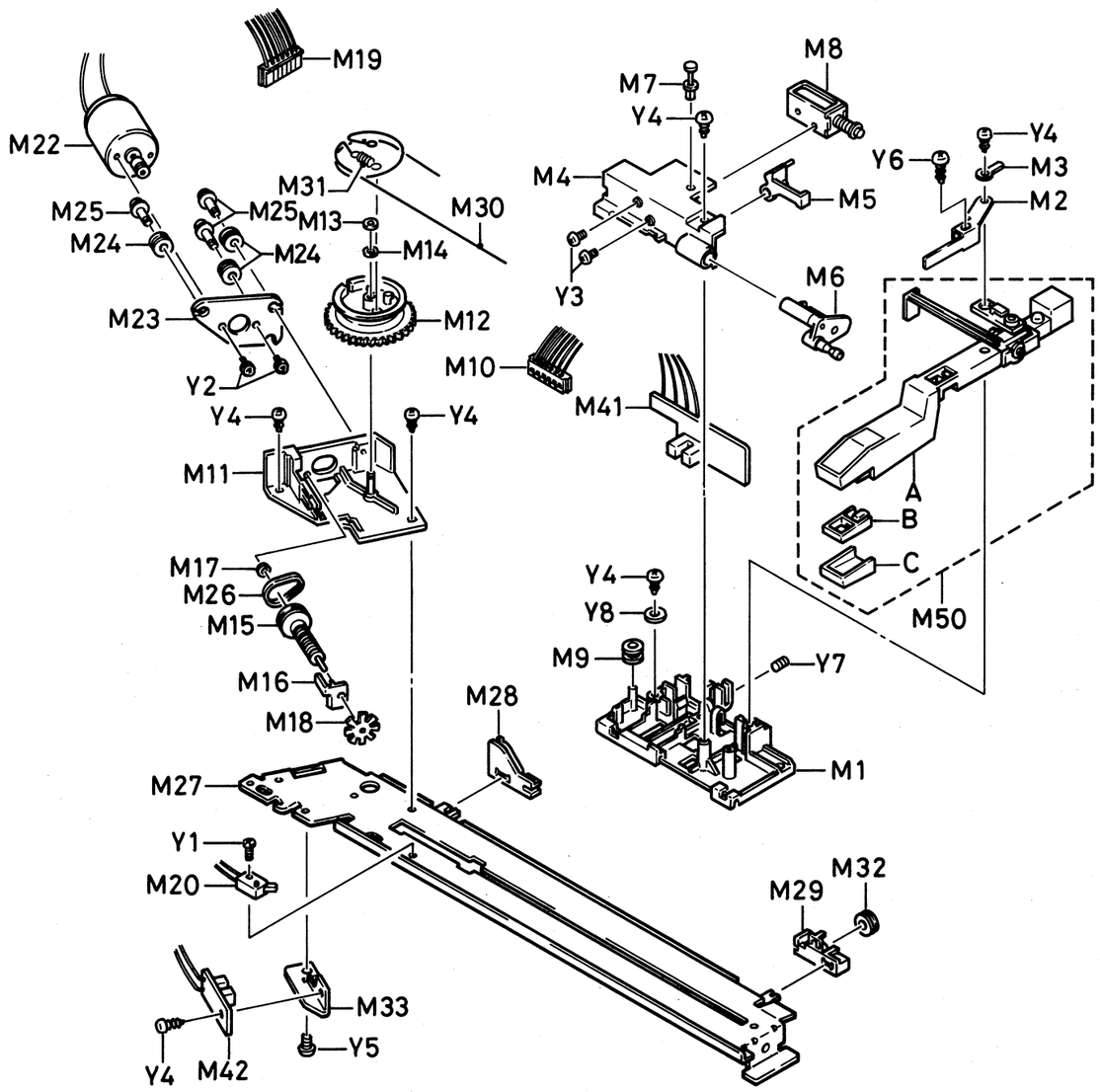
PULSE COUNT SENSOR P.C.BOARD ASSY

Ref. No.	Part No.	Description
M42	141-4-280T-49400	P.C BOARD ASSY, PULSE COUNT SENSOR
	4-202T-51500	PHOTO INTERRUPTER

FIXING PARTS (MECHANISM)

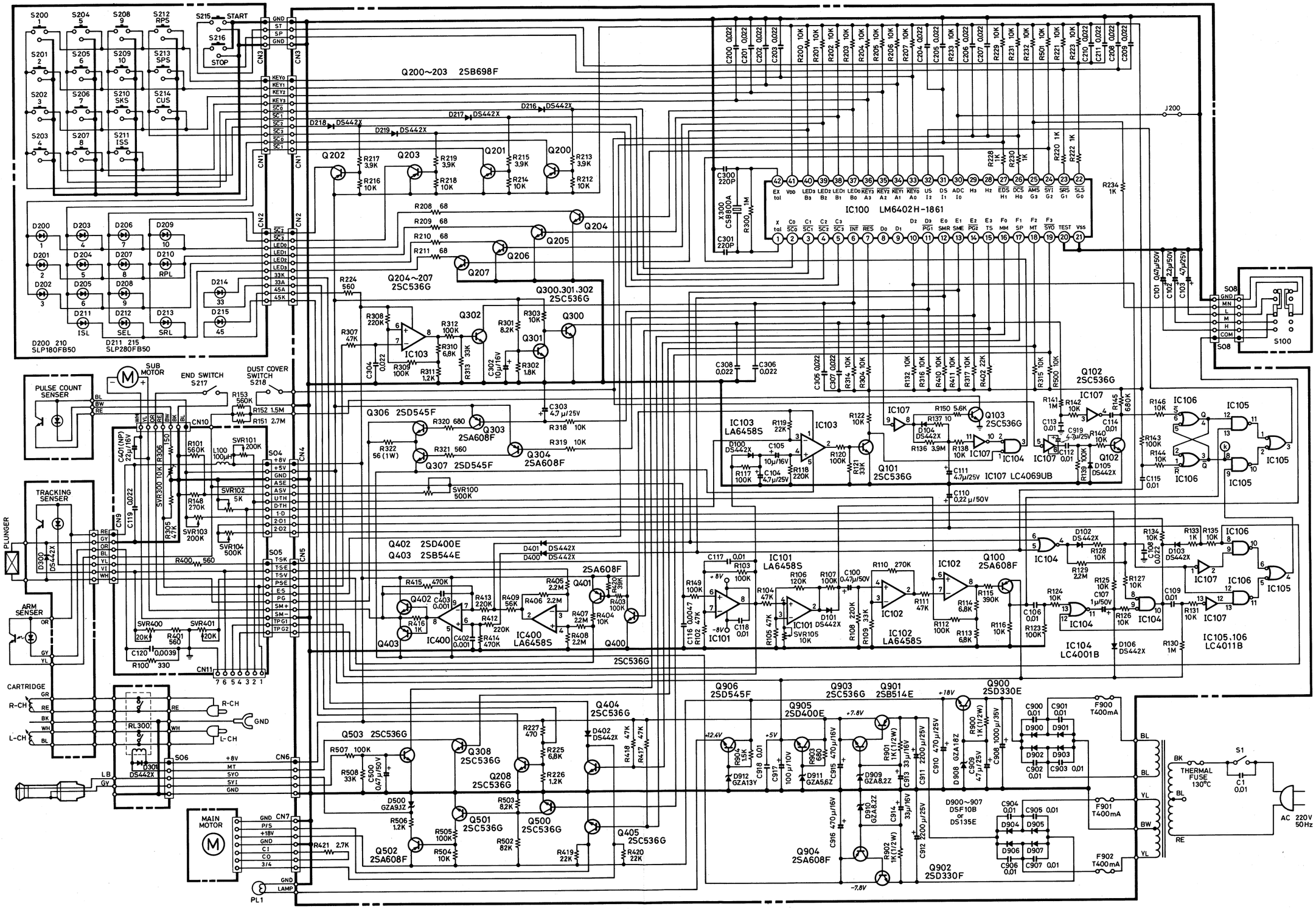
Ref. No.	Part No.	Description
Y1	BS3BS1R7+8+Z1	PAN HD 3B SPECIAL TAPPING SCREW 1.7X8, SWITCH (M20)
Y2	BJC4S++2+3+Z1	CUP SCREW 2X3, SUB MOTOR (M22)

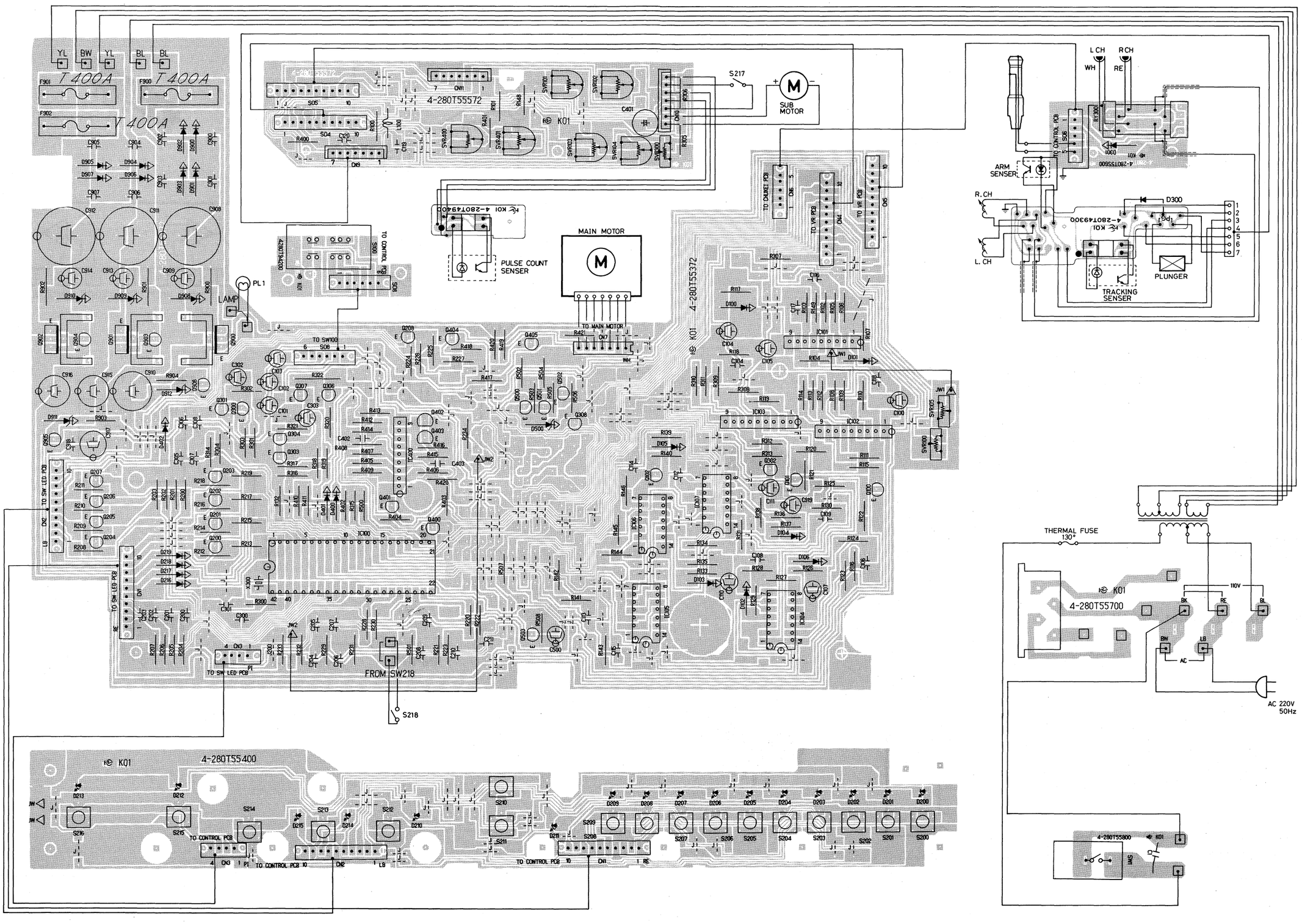
EXPLODED VIEW (MECHANISM)



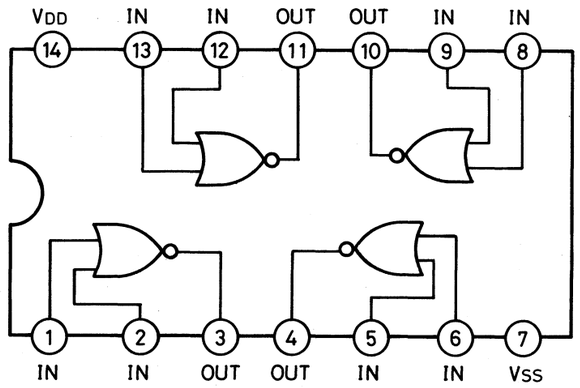
MEMO

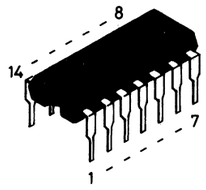
SCHEMATIC DIAGRAM



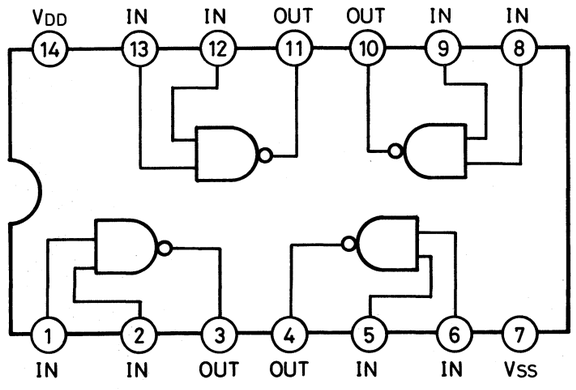

YL
BW
YL
BL
BL
F901
T 400A
F900
T 400A
F902
T 400A
4-280T55572
S05
S04
CN11
CN9
K01
S217
SUB MOTOR
MAIN MOTOR
PULSE COUNT SENSER
4-280T49400
TO CONTROL PCB
S100
PL1
LAMP
TO SW100
S08
TO MAIN MOTOR
CN7
WH
4-280T55372
TO CAMEL PCB
TO VR PCB
CN5
CN4
CN6
L CH
R CH
WH
RE
RX300
TO CONTROL PCB
S06
4-280T55600
ARM SENSER
D300
4-280T49300
TRACKING SENSER
PLUNGER
TO SW LED PCB
CN1
CN2
CN3
P1
FROM SW218
S218
4-280T55400
S200
S201
S202
S203
S204
S205
S206
S207
S208
S209
S210
S211
S212
S213
S214
S215
S216
THERMAL FUSE
130°
4-280T55700
110V
BK
RE
BL
BW
LB
AC
AC 220V
50Hz
4-280T55800
LWS

LC4001B (Quad 2-Input NOR Gate)

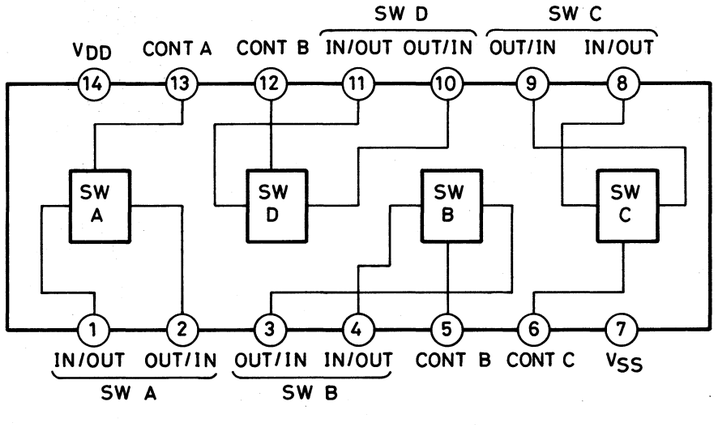


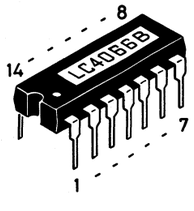


LC4011B (Quad 2-Input NAND Gate)

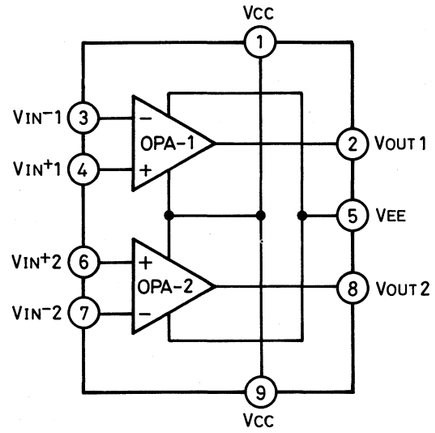


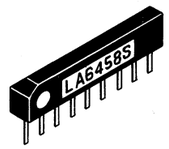
LC4066B (QUAD BILATERAL SWITCH)

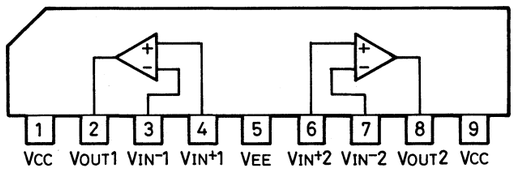

SW D
SW C
VDD CONT A CONT B IN/OUT OUT/IN OUT/IN IN/OUT
14 13 12 11 10 9 8
SW A
SW D
SW B
SW C
1 2 3 4 5 6 7
IN/OUT OUT/IN OUT/IN IN/OUT CONT B CONT C VSS
SW A
SW B



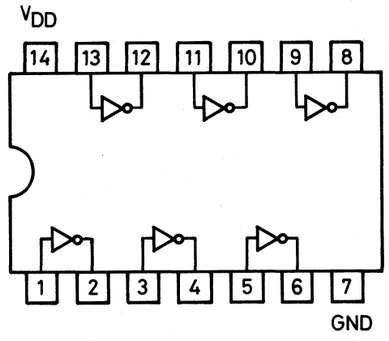
LA6458 S (Dual Operational Amplifier)





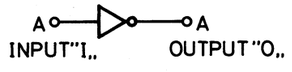


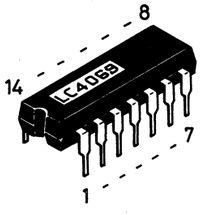
IC701. 831 LC4069 (HEX INVERTER)



TRUTH VALUE TABLE

INPUT	OUTPUT
"I„	"O„
L	H
H	L





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